

## Discrete Applied Mathematics

Combinatorial Algorithms, Optimization and Computer Science

### Guide for Authors

#### General

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- Original research articles.
- Review articles, providing a comprehensive review on a scientific topic.
- Communications: Fast, short, self-contained articles on ongoing research, or reporting interesting possibly tentative ideas, or comments on previously published research. See note below on how to submit a Communication.
- Postscript Articles: Short updates to previously published articles in Discrete Applied Mathematics. See section below for more details on this kind of article.

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Alternatively, contributions can also be sent in triplicate to:

Publications Office, RUTCOR, Rutgers, The State University of New Jersey, 640 Bartholomew Road, Piscataway, NJ 08854-8003, USA.

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#### Manuscript preparation

The name, complete postal address, telephone, fax numbers and the e-mail address of the author(s) should be given on the first page of the manuscript.

Each paper should be introduced by three to five keywords and a selfcontained abstract of no more than 100 words, not counting the formulas.

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References should be listed alphabetically, as in the following examples: books [1], articles in journals [2], papers in a contributed volume [3,4], unpublished papers [5].

- [1] E. Borger, Computability, Complexity, Logic, North-Holland, Amsterdam, 1989.

- [2] D.E. Knuth, Theory and Practice, Theoret. Comput. Sci. 90 (1991) 1–15.
- [3] A.K. Lenstra, H.W. Lenstra, Jr., Algorithms in number theory, in: J. vanLeeuwen (ed.), Handbook of Computer Science, Vol. A, Elsevier, Amsterdam, 1990, pp. 673–715.
- [4] M. Li, Lower bounds by Kolmogorov complexity, in: Proc. ICALP '85, Lecture Notes in Computer Science, Vol. 194, Springer, Berlin, 1985, pp. 383–393.
- [5] A. Rajasekar, Semantics for logic programs, Ph.D. Thesis, Department of Computer Science, University of Maryland, 1989.

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- Each keyword (which can be a phrase of more than one word) should describe one single concept. Words like “and” or “of” should be avoided.
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- Try to use nouns and adjectives as much as possible (i.e. use “automatic error recovery” rather than “recovering errors automatically”). Do not use nouns in the plural form.
- Use English rather than American spelling (regardless of the spelling used for the article itself).
- Avoid the use of abbreviations as much as possible, unless an abbreviation is so well-established that the full term is rarely used (e.g. use “laser” instead of “Light Amplification by Stimulated Emission of Radiation”, but use “computer aided design” instead of “CAD”).

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## Mathematical Software Section

The section will consider papers falling in the same areas as *Discrete Applied Mathematics*, and will essentially publish three kinds of contributions:

1. Regular papers, processed and accepted for their mathematical novelty, for which, in addition, the authors give and describe the corresponding computer codes.
2. Papers presenting significant implementations of algorithms from the literature, provided they are of particular interest to the scientific community. Criteria for acceptance of this kind of contribution will be: high efficiency, proved through extensive computational experiments, significantly improving that of the best existing codes (one order of magnitude is considered to be significant); novelty of the software, when no other code for the same problem is available to the public domain.
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To submit their work, authors are requested:

- To mail three hard copies of the manuscript to Publications Office, RUTCOR, Rutgers, The State University of New Jersey, 640 Bartholomew Road, Piscataway, NJ 08854-8003, USA, mentioning “Mathematical Software Section” in their covering letter and
- To send the codes electronically to Professors S. Martello and P. Toth at [smartello@deis.unibo.it](mailto:smartello@deis.unibo.it)/[ptoth@deis.unibo.it](mailto:ptoth@deis.unibo.it)

Only source codes are considered. Accepted languages are FORTRAN and C. The codes must strictly conform to the ANSI 77 Standard FORTRAN and to the ANSI C Standard, respectively.

The codes must be clean, well documented and self contained. Use of machine-dependent constants and functions should be avoided or, when needed, clearly stated. Each code must contain a main subroutine or procedure which receives all the input data and yields all the output data as parameters. Such a routine must begin with a comments section providing:

- clear description of the domain of applicability
- meaning of each input and/or output parameter
- list of machine dependent constants and functions
- list of the routines composing the codes
- type of structure of all the parameters
- rules for the arrays dimensioning
- meaning of the main interval variables

Indentation is recommended for loops and if-then-else statements. The labels in each routine should be consecutive with constant step. Examples of well-structured codes can be found in Martello and Toth, “Knapsack Problems: Algorithms and Computer Implementations”, Wiley, 1990.

Each code must be accompanied by a driver program which:

- defines the input data for one or more sample instances through assignment or input statements (in the latter case, the contents of the input records must be explicitly listed)
- calls the main routine of the code
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